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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/615,081      07/12/00      SUENAGA

Y      XA-9335

020230

MM92/1106

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WASHINGTON DC 20036

EXAMINER

ROBINSON, M

ART UNIT

PAPER NUMBER

2872

DATE MAILED:

11/06/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

# Office Action Summary

Application No.

09/615,081

Applicant(s)

SUENAGA ET AL.

Examiner

Mark A. Robinson

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 17-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17-28 is/are allowed.
- 6) ☒ Claim(s) 29,32,39-42,45,49 and 50 is/are rejected.
- 7) ☒ Claim(s) 30,31,33-38,43,44 and 46-48 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 July 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Claim Objections*

1. Claim 41 is objected to as being in improper form because although the claim is directed to a method, it contains no active method steps.

### *Drawings*

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the aperture portion in the reflecting surface must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claims 29,32,39-42,45,49 and 50 are rejected under 35 U.S.C. 102(b) as being anticipated by Foo ('207) made of record.

Foo shows an optical system and method including catadioptric and refractive optical systems including first(20b) and concave second(20c) reflecting elements which form an intermediate image(70) of an object(12), light from the second reflector passing the first reflector off-axis, with the refraction system reimaging the image onto a second plane(15) parallel to the object plane(12). Note that the exit pupil is substantially circular and that the refraction system includes different types of glass (see table 1).

5. Claim 50 is rejected under 35 U.S.C. 102(b) as being anticipated by Matsumoto ('028) made of record.

Matsumoto shows an optical system and method including catadioptric and refractive optical systems including concave first(M1/M3) and second(M2) reflecting elements which form an intermediate image(I(O)) of an object(O) at an off-axis location, light from the second reflector passing the first reflector off-axis, with the refraction system(P2) reimaging the image onto a second plane(I) parallel to the object plane(O), with the catadioptric optical system explicitly shown to be disposed on a common axis.

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*Allowable Subject Matter*

6. Claims 17-28 are allowed.

7. Claims 30,31,33-38,43,44 and 46-48 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: the prior art does not teach or suggest a catadioptric optical system including the claimed reflective element with off-axis aperture portion as set forth in the combination of claim 17, or including the arrangement of elements as set forth in the combination of any of claims 30,31,36-38,43,44 or 46-48, or which includes elements satisfying the conditions set forth in the combination of any of claims 33-35.

*Response to Arguments*

9. Applicant's arguments with respect to the newly submitted claims have been considered but are moot in view of the new ground(s) of rejection.

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*Conclusion*

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Chen shows a catadioptric optical system.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

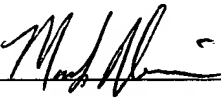
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Robinson whose telephone number is (703) 305-3506.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached at (703) 308-1687. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Mark Robinson

Patent Examiner

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10/30/01



**Cassandra Spyrou**  
**Supervisory Patent Examiner**  
**Technology Center 2800**